

U.S.S.N. 10/665,793
Filed: September 19, 2003
PRELIMINARY AMENDMENT

In the Claims

1. (Currently amended) A brachytherapy strand or seed for implantation into a subject comprising seeds comprising
 - (a) a non-radionuclide imaging marker, and
 - (b) a biocompatible carrier,
wherein the strand or seed is flexible or elastic, and has a size and shape suitable for passing through the bore of a needle having an interior diameter of less than about 2.7 millimeters (10 gauge).
2. (Currently amended) The strand or seed of claim 1 formed of a synthetic polymer.
3. (Currently amended) The strand or seed of claim 1 formed of an inorganic material.
4. (Currently amended) The strand or seed of claim 1 formed of a natural material selected from the group consisting of proteins, peptides, polysaccharides, lipids, and combinations thereof.
5. (Currently amended) The strand of claim 1 formed of a shape memory material.
6. (currently amended) The strand or seed of claim 1 further comprising a therapeutic, prophylactic or diagnostic agent.
7. (Currently amended) The strand or seed of claim 1 further comprising conduits, cavities, microbubbles, or pores along the length of the strand.
8. (Currently amended) The strand or seed of claim 7 further comprising a portal for external access using a needle or other introducer instrument for purposes of filling the conduits,

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cavities, microbubbles, or pores with therapeutic, prophylactic or diagnostic agents after implantation.

9. (Currently amended) The strand or seed of claim 1 further comprising a radioactive agent.

10. (Currently amended) The strand or seed of claim 1 wherein the imaging marker is detectable by X-ray, fluorescence, infrared, ultrasound, magnetic detection, or MRI.

11. (Currently amended) The strand or seed of claim 1, wherein the size and shape is suitable for passing through the bore of a needle having an interior diameter of less than about 1.4 millimeters (15 gauge).

12. (Currently amended) The strand or seed of claim 1, wherein the seed is shaped into a cylinder having a diameter of between about 0.5 to 3 millimeters and a length of 4 to 500 millimeters.

13. (Original) The strand of claim 1, wherein the strand comprises seeds strung on or formed as a strand of between about 0.5 and 3 mm diameter and a length of between one and 50 cm.

14. (Currently amended) The strand or seed of claim 1, wherein the carrier is biodegradable.

15. (Currently amended) The strand or seed of claim 1 further comprising a material selected from the group consisting of ferromagnetic microspheres, oxygen, hemoglobin, synthetic hemoglobin-like substances and drugs for enhancing oxygen perfusion.

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16. (Currently amended) The strand of claim 1, further comprising a radioactive agent seeds.

17. (Currently amended) The strand or seed of claim 9 further comprising a means of tracing the radioactive agent.

18. (currently amended) The strand or seed of claim 1 further comprising a radiosensitizing agent.

19. (Currently amended) The strand or seed of claim 1 wherein the imaging marker is a radiopaque marker comprising a substance selected from the group consisting of platinum, iridium, rhenium, gold, tantalum, bismuth, indium, tungsten, silver, and radiopaque polymers.

20. (Currently amended) The strand or seed of claim 1 further comprising hairs coating the external surface surface of the brachytherapy strand or seed for enhancement of adhesive potential.

21. (currently amended) The strand or seed of claim 1 28 further comprising shape memory polymeric anchoring structures or electroactive polymeric anchoring structures.

22. (currently amended) The strand or seed of claim 3 wherein the inorganic material is selected from the group consisting of silicon, coral, fullerene, bioceramic, and hydroxyapatite.

23. (currently amended) The strand or seed of claim 1 wherein the seed is formed of a composite of an inorganic material and a polymer.

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24. (Currently amended) A method of making a brachytherapy strand or seed for implantation into a subject comprising mixing a biocompatible ~~flexible or~~ elastic carrier with a non-radioactive imaging agent to form seeds in a brachytherapy strand or seed.

25. (Currently amended) A method for administering a therapeutically active component to a target tissue in a subject, the method comprising implanting a brachytherapy strand or seed comprising seeds comprising

(a) a non-radionuclide imaging marker, and

(b) a biocompatible carrier,

wherein the strand or seed is ~~flexible or~~ elastic, and has a size and shape suitable for passing through the bore of a needle having an interior diameter of less than about 2.7 millimeters (10 gauge).

26. (Original) The method of claim 25, wherein the target tissue is a diseased tissue selected from the group consisting of prostate, breast and tongue.

27. (New) The strand of claim 16, wherein the seeds are formed of a material selected from the group consisting of non-polymeric or inorganic materials and polymers.

28. (New) The strand or seed of claim 1, further comprising polymeric anchoring structures.

29. (New) The strand or seed of claim 28, wherein the anchoring structures are selected from the group consisting of ridges, bumps, bristles, rings, hooks, and pop-up wings.

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30. (New) The strand or seed of claim 6, comprising one or more areas comprising a therapeutic, prophylactic or diagnostic agent and one or more areas comprising spacers.

31. (New) The strand of claim 1, wherein the strand forms a mesh or lattice.

32. (New) The strand or seed of claim 9, wherein the radioactive agent is contained within a biodegradable carrier.